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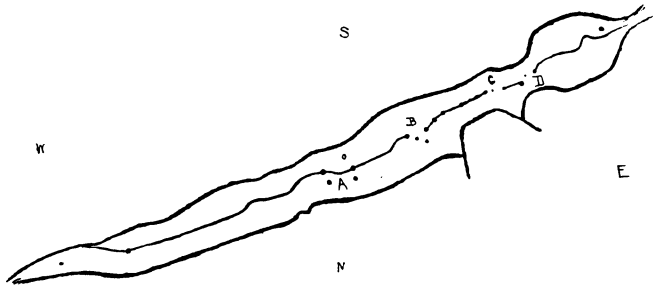
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the valley. It was observed on April 23d, May 6th, 22d, 23d, June 4th, July 2d, and August 30th, under both evening and morning illumination.

The rill extends the entire length of the valley, through the middle, and is continuous except at three points. It was suspected to cross one of these short gaps, and it is possible that, by observing diligently under good conditions, the rill could be traced across them all. It is visible only when the Moon is from eight to nine days, and twenty to twenty-one days, old. Owing to extreme narrowness,—the width is from three hundred to six hundred feet,—the rill can be seen only with a large telescope, and requires excellent atmospheric conditions.

The accompanying drawing is compiled from all the sketches. No attempt has been made to include details except such as are connected with the rill, or craterlets very near to it. Attention may be called to the great number of craterlets strung along the rill in some regions and to the fact that at all the gaps the rill terminates in craterlets.



Rill in the Valley of the Alps.

I have examined a number of the negatives of this region of the Moon, taken with the 36-inch refractor, especially those taken with an enlarging lens, but fail to find any trace of the rill upon them.

C. D. PERRINE.

October 16, 1904.

#### THE NUMBER OF THE NEBULÆ.

Professor KEELER, soon after beginning his program of work with the Crossley reflector, showed that the number of the nebulae is very much greater than had been supposed. He

conservatively placed the number within reach of that telescope at one hundred and twenty thousand. The recent completion of this program enables us to revise his estimate.

In fifty-seven regions seven hundred and forty-five *new nebulae* have been discovered. There were one hundred and forty-two known nebulae in these regions, making the total number of nebulae observed eight hundred and eighty-seven, an average of eight and one half per region. As it would take sixty-two thousand such photographs to cover the entire sky, the results indicate five hundred thousand as the corresponding number of nebulae within reach of the Crossley reflector. This assumes that the small portion observed represents fairly the entire sky.

Longer exposures, more sensitive plates, and more perfect photographs will undoubtedly reveal some nebulae which do not now appear and others which are confused with the faint stars. It seems probable, therefore, that the number of the nebulae will ultimately be found to exceed a million.

June 18, 1904.

C. D. PERRINE.

#### A NEW MOUNTING FOR THE CROSSLEY THREE-FOOT MIRROR.

The new mounting for this excellent mirror, which has been in the process of installation during the past year, was so far completed as to permit of its use in obtaining photographs of the ninth satellite of *Saturn*. The focus was determined (photographically) on November 5th, and on the following night observations of *Saturn* were begun. A few minor improvements have since been made, and some final adjustments are still necessary.

So far as it has been used, the telescope is very stable. No change of focus or collimation can be detected when the telescope is moved over a considerable range of zenith-distance.

A description of the telescope will be published soon.

November 28, 1904.

C. D. PERRINE.

#### THE TOTAL ECLIPSE OF SEPTEMBER 9, 1904.

A total eclipse of the Sun occurred on September 9, 1904. The shadow path crossed the central Pacific Ocean from west to east without touching known land, except that it reached